

CLAIMS

What is claimed is:

1. A system enabling a web services network, comprising:
 - 5 a parent node operably connected to a computer network,
the parent node maintaining a first routing table stored in a persistent data store, the first routing table including routing entries allowing for the routing of service action requests and responses across the computer network; and
at least one routing node maintaining a local routing table including routing
10 entries allowing for the routing of service action requests and responses across the computer network;
the routing node operably connected to the computer network to route service action requests and service action responses across the computer network,
wherein the parent node is operative to add a routing entry to the local routing
15 table of the routing node in response to a routing entity request;
wherein the routing node, in response to service action request requiring a routing entry not contained in the local routing table, transmits a routing entity request to the parent node.
- 20 2. The system of claim 1 wherein the parent node is operative to maintain the local routing table(s) on the routing node(s) associated therewith.
3. The system of claim 1 wherein the parent node is operative to receive and process updates to routing entries in the first routing table; and wherein, in response to the
25 updates, the parent node is operative to update the local routing table(s) on the routing node(s) associated therewith.
4. The system of claim 1 wherein the parent node is a root node, and the first routing table is a global routing table.

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5. The system of claim 1 wherein the parent node is operative to route service action requests and service action responses across the computer network.

6. The system of claim 2 wherein the parent node maintains a routing matrix in the persistent data store, wherein the routing matrix facilitates maintenance of the local routing table(s) of the routing node(s) associated with the parent node.

7. The system of claim 6 wherein the routing matrix facilitates identification of out-of-date routing entries in the local routing table(s) of the routing node(s) associated with the parent node.

8. The system of claim 7 wherein the routing matrix contains parent node update stamps for corresponding routing entries in the first routing table; and wherein, for each routing node associated with the parent node, the routing matrix contains a routing node update stamp for each routing entry in the local routing table.

9. The system of claim 7 wherein the parent node is operative to update a routing entry in the local routing table of a routing node based on a comparison of the corresponding parent node update stamp and routing node update stamp.

10. The system of claim 1 wherein the local routing table is a subset of the first routing table.

11. The system of claim 1 wherein the routing node resides on a network routing device.

12. The system of claim 1 further comprising a console application providing a user interface facilitating configuration of the parent node and the routing node.

13. The system of claim 12 wherein the console application transmits service action requests operative to change the configuration of the parent node and/or the routing node.
- 5 14. The system of claim 1 wherein the parent node includes platform services functionality allowing for configuration of the parent node and the routing node; and wherein the platform services functionality is presented as a web service accessible via a service action request.
- 10 15. A system enabling a web services network, comprising:
- a root network services engine operably connected to a computer network,
the root network services engine maintaining a persistent data store storing a global routing table including routing entries allowing for the routing of service action requests and responses over the computer network;
 - 15 a network services engine operably connected to the computer network,
the network services engine maintaining a persistent data store storing a first local routing table including routing entries allowing for the routing of service actions requests and responses over the computer network;
 - at least one network services switch operably connected to the computer
20 network,
the network services switch maintaining a second local routing table including routing entries allowing for the routing of service actions requests and responses over the computer network;
 - wherein the routing node is operative to route service action requests
25 and service action responses to appropriate nodes connected to the computer network,
wherein the root network services engine is operative to add a routing entry to the first and/or second local routing table in response to a routing entity request;
 - wherein the network services engine is operative to add a routing entry to the
30 second local routing table in response to a routing entity request;

wherein the network services engine passes routing entity requests associated with a routing entry not contained in the first local routing table to the root network services engine; and,

wherein the network services switch is operative to transmit a routing entity
5 request to the network services engine in response to a service action request
requiring a routing entry not contained in the second local routing table.

16. The system of claim 15 wherein the root network services engine is operative to
maintain the local routing tables on the child network services engines and switches
10 operably directly associated therewith.

17. The system of claim 15 wherein the network services engine is operative to
maintain the local routing tables of the child network services engines and switches
operably directly associated therewith.

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18. The system of claim 15 wherein the network services engine is operative to route
service action requests and service action responses across the computer network.

19. The system of claim 15 wherein the network services engine is operative to
20 receive and process updates to routing entries in the first local routing table; and
wherein, in response to the updates, the network services engine is operative to
update the global routing table on the root network services engine and the second
local routing table(s) on the routing node(s) associated therewith.

25 20. The system of claim 16 wherein the root network services maintains a routing
matrix in the persistent data store, wherein the routing matrix facilitates
maintenance of the local routing table of child network services engine(s) and the
network services switches directly associated therewith.

21. The system of claim 20 wherein the routing matrix facilitates identification of out-of-date routing entries in the local routing table(s) of the child network services engine.

5 22. The system of claim 21 wherein the routing matrix contains parent node update stamps for corresponding routing entries in the global routing table; and wherein, for each child routing node directly associated with the root network services engine, the routing matrix contains a routing node update stamp for each routing entry in the local routing table.

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23. The system of claim 21 wherein the network services engine is operative to update a routing entry in the local routing table of a child routing node based on a comparison of the corresponding parent node update stamp and routing node update stamp.

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24. A method facilitating the generation of globally unique network identifications, the method comprising the steps of:

receiving a globally unique network operator identification;

assigning an identification to a web services network;

20 generating an entity identification corresponding to a new routing entity associated with the web services network;

concatenating the unique network operator identification, the web services network identification, and the entity identification to yield a network identification; and

25 associating the network identification with the new routing entity.

25. The method of claim 24 further comprising the step of generating an arbitrary value associated with the new routing entity identification; and wherein the arbitrary value is included in the network identification in the concatenating step.

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26. The method of claim 25 wherein the arbitrary value is generated by a random number generator.

27. The method of claim 25 wherein the arbitrary value is based on a time value
5 associated with generation of the entity identification.

28. A method for providing a web services network on a computer network
environment, the computer network environment including a plurality of routing
nodes operative to route data between nodes connected to the computer network,
10 the method comprising the steps of

installing a network services engine on the computer network environment;

installing at least one network services switch on computer network
environment;

wherein the network services engine is operable to support and maintain the network
15 services switch(es); and,

wherein the network services switch is operable to route service action requests and
responses to appropriate nodes in the computer network environment.

29. The method of claim 28 wherein the network services switch(es) are installed on
20 existing routing nodes in the computer network environment.